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RI/FS WORK PLAN - REVISION 1
U.S. DEPARTMENT OF ENERGY FEED MATERIALS PRODUCTION CENTER FERNALD, OHIO OH6 890 008 976

12/21/87

USEPA/DOE
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LETTER

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Original File Copy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

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REPLY TO THE ATTENTION OF:

5HE-12

DEC 21 1987

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. James A. Reafsnyder
United States Department of Energy
Environmental Protection Division
P.O. Box E
Oak Ridge, Tennessee 37830

Re: RI/FS Work Plan - Revision 1
U.S. Department of Energy
Feed Materials Production Center
Fernald, Ohio
OH6 890 008 976

Dear Mr. Reafsnyder:

The United States Environmental Protection Agency (U.S. EPA) has completed a review of the United States Department of Energy's (U.S. DOE) Remedial Investigation (RI) Work Plan for the Feed Materials Production Center in Fernald, Ohio. A preliminary Work Plan for the Feasibility Study (FS) was also submitted; U.S. DOE plans to revise and resubmit this document at a further date. The Work Plan was submitted in accordance with requirements of the June 18, 1986, Federal Facility Compliance Agreement (FFCA) between U.S. DOE and U.S. EPA. The draft Work Plan and subsequent U.S. EPA comments have been submitted according to the following schedule:

07/18/86	Effective date of FFCA
10/16/86	Original Work Plan due date (90 days from FFCA)
12/22/86	12/09/86 draft Work Plan received by U.S. EPA
01/30/87	Submission of Sampling, Safety, Community, Data, and Quality Assurance Plan
05/14/87	U.S. EPA Work Plan (Revision 0) draft comments to U.S. DOE
06/24/87	U.S. EPA disapproved Work Plan; comments to U.S. DOE
07/22/87	U.S. EPA/U.S. DOE/Ohio Environmental Protection Agency (OEPA) comment resolution meeting
08/24/87	U.S. DOE submitted responses to U.S. EPA comments
09/08/87	Work Plan (Revision 1) received by U.S. EPA

Date Rec'd DEC 30 1987
Log B-567
File 5492

due date 2-11-87

The purpose of the RI is to determine the nature and extent of any release or threat thereof, of hazardous substances and to collect all necessary data to support a FS. It is U.S. EPA's position that the Work Plan does not fulfill these requirements and U.S. EPA is disapproving Work Plan Revision 1.

The deficiencies in the RI portion of the Work Plan and preliminary FS Work Plan are presented in an attachment. Comments developed by OEPA have been integrated into U.S. EPA's list of deficiencies. The comments have been divided according to the sections of the Work Plan, as presented in the following outline.

Task 1: Description of Current Situation

Task 2: Work Plan and Supporting Documents

A. Work Plan
   - 1.0 Introduction
   - 2.0 Problem Definition
   - 3.0 Preliminary Evaluation
   - 4.0 Technical Approach: RI
   - 5.0 Technical Approach: FS
   - 6.0 Management Plan

B. RI Work Plan Supporting Documents

   Volume 1: Sampling Plan
   - 1.0 Radiation Measurement Plan
   - 2.0 Surface Soils Sampling Plan
   - 3.0 Groundwater Sampling Plan
   - 4.0 Subsurface Soils Sampling Plan
   - 5.0 Surface Water and Sediment Sampling Plan
   - 6.0 Biological Resources Sampling Plan
   - 7.0 Facilities Testing Plan

   Volume 2: Environmental Health and Safety Plan

   Volume 3: Community Information Plan

   Volume 4: Data Management Plan

   Volume 5: Quality Assurance Plan

Disapproval of the revised Work Plan requires the implementation of the Dispute Resolution provision of the FFCA, if the deficiencies in the Work Plan can not be addressed to the satisfaction of U.S. EPA. U.S. EPA would like to proceed with informal negotiation for the remaining deficiencies. Work Plan Revision 2 should be submitted to U.S. EPA and OEPA within forty-five (45) days of the date of this letter. If the second revision is not adequate, the formal dispute resolution process will be initiated.

U.S. EPA outlined deficiencies in the Task 1: Description of Current Situation deliverable with the Task 2 Work Plan deficiencies. U.S. DOE responded to these deficiencies with a revised report separate from the Task 2 revision. The revisions to Task 1 were received by U.S. EPA on December 7, 1987. Revision 1 of Task 1 will be reviewed by U.S. EPA and an approval or any deficiencies will be presented in future correspondence.

Contact Catherine McCord at (312 or FTS) 886-1478, if there are any questions regarding this matter.

Sincerely yours,

Wm. E. Muno

William E. Muno, Chief
RCRA Enforcement Section

Enclosure

cc: Graham Mitchell, OEPA-SWDO (w/enclosure)
Mike Savage, OEPA-CO (w/enclosure)
Margaret Wilson, U.S. DOE (w/enclosure)

Work Plan - Revision 1 Deficiencies

TASK 1: DESCRIPTION OF CURRENT SITUATION

Comments on the Work Plan that involve descriptions of the waste pits affect similar descriptions in Task 1: Description of Current Situation Report. U.S. DOE submitted a revised Task 1 report to U.S. EPA on December 8, 1987. Additional comments on Task 1 will be presented to U.S. DOE under separate cover.

TASK 2: RI WORK PLAN AND SUPPORTING DOCUMENTS

A. Work Plan

1.0 INTRODUCTION

(1) Section 1.0 is not paginated

(2) Section 1.3.: The second bullet was not re-written for clarification and to exclude the use of the word "components".

(3) Section 1.4: The second paragraph should state that remedial action alternatives will be evaluated in the Feasibility Study (FS); U.S. EPA will select the remedy that is to be implemented.

2.0 PROBLEM DEFINITION

(4) Section 2.1.3.2, pg. 2-7: Correct last sentence to include information that the Knollman/Crawford well, the third well, had not been used for drinking water purposes. Indicate when its use for this purpose was discontinued. Two typographic errors in this sentence.

(5) Section 2.2.1, pg. 2-13: The second paragraph incorrectly states that settleable solids were removed from "Pit #5" waste streams by clarification.

(6) Section 2.2.1, pg. 2-9: Discussion of historic use of waste pits should be modified to include that Pit #1 was used as a clearwell for liquid wastes after Pit #2 was constructed and that Pit #1 effluent was pumped and discharged into the Great Miami River.

(7) Section 2.2.4, pgs. 2-10 and 2-11: CIS data indicates that PCBs are located in all waste areas. This indicates a high probability of waste oils being disposed in more than just the old fly ash pile. This section should be revised accordingly.

(8) Section 2.3.4, pg. 2-21: Substances that have been stored and/or are currently being stored in underground tanks should be inventoried. Soil gas detection area of currently used tanks and former tank locations should be considered. Have out-of-service tanks and associated tanks and associated piping been removed?

(9) Section 2.3.4, pg. 2-21: Procedures for fulfilling requirements of the interim underground storage tank requirements of 40 CFR 280 should be incorporated into the tank investigation effort.

(9) Section 2.3.4, pg. 2-21: All drains, sumps, and floor drains in the production area should be included in the Remedial Investigation (RI) Work Plan.

(10) Section 2.5.5, pg. 2-36: The revision did not state that three private wells to the south of the facility were used as a potable water supply until the contamination was made public. The text should clearly state that these three wells were used for drinking water until the contamination was discovered. Give the date of contamination discovery, date that public was informed, and date(s) that use was discontinued (see next comment).

(11) Section 2.5.5, pg. 2-36: Information regarding current access to uranium-contaminated private wells for drinking water was not added to Revision 1.

(12) Section 2.6.3, pg. 2-37: First sentence regarding potential health impacts should be revised from three to six components.

(13) Section 2.6.3, pg. 2-37: The fifth component should be revised to include existing wells.

3.0 PRELIMINARY EVALUATION

(14) Section 3.1, pg 3-4: The no-action alternative is not to be included in the assessment of cost-effectiveness of remedial action alternatives. The no-action alternative is to be evaluated from the protection of human health and the environment.

4.0 TECHNICAL APPROACH: RI

(15) Section 4.2.1.2, pg. 4-12: Current data to characterize off-site surface soil uranium concentration is not adequate. The litigation support data from the "Air, Soil, Water, and Health Risk Assessment in the Vicinity of the FMPC, Fernald, Ohio" report has been reviewed by U.S. EPA. The current data does not adequately characterize surface soil contamination of all off-site areas with the degree of certainty that would be protective of public health. The current data does not account for the estimated 136,000 kilograms of uranium (particulate form) that has been released to the atmosphere over the site's operating life. The Work Plan should be modified with detailed plans for acquiring additional soil data (uranium, radionuclides, and hazardous substances) in certain off-site sections, specifically, the perimeter and downwind sectors. In addition to the random sampling, additional off-site soil sampling should include a biased sampling scheme similar to that proposed for on-site areas. Sampling for soil contamination along the off-site perimeter should be adequate to ensure less than 10.0 pCi/g contamination, at a 90 percent confidence level. Additionally, a ninety percent confidence level report on uranium in soil extending out to 3 miles from the site center in the northeast quadrant is required. This will permit the identification of the deposition pattern from the prevailing winds.

(16) Section 4.2.1.2, pg. 4-12: Hazardous "chemicals" in the last sentence should be changed to hazardous "substances".

(17) Section 4.2.1.3, pg. 4-20: The second overall objective of the groundwater sampling plan should be expanded from "to determine the concentration and sources of contaminants on-site" to include the migration of hazardous substances from the site.

(18) Figure 4.5, pg. 4-23: Well #175 is not labeled on this figure.

(19) Figure 4.6, pg. 4-24: The legend indicates that the figure is to include general groundwater flow direction. There are no such indicators in this figure. If flow direction is to be included in Figure 4.6, it should also be indicated on Figures 4.4, 4.5, and 4.7.

(20) Figure 4.7, pg. 4-25: Explain why monitoring wells 203 and 205 on Figure 3.4 of the original Work Plan are now designated as 300-series wells (303 and 305) in Revision 1.

(21) Table 4.2 pg 4-28: Well 205 is not listed in table.

(22) Section 4.2.1.3, pg. 4-29: Re-evaluate the location of blue clay layer and 300-series wells based on well logs from newly installed wells.

(23) Section 4.2.1.3, pg. 4-30: The discussion of wells in the production should be modified from "no wells are currently proposed within the active Production Area" to the location of wells in the Production Area will be determined upon completion of the soil surveys, radiological surveys, and when groundwater flow patterns and conditions in the surrounding area have been better established.

(24) Section 4.2.1.3, pg. 4-30: The discussion regarding sampling of the 100-series wells prior to advancing to deeper holes in the sand and gravel aquifer should be modified to include recent U.S. EPA approval for installation of entire well clusters. Field screening techniques and analytes should be specified in the Work Plan. Soil gas monitoring should be considered as one of these screening devices for areas of suspected contamination.

(25) Section 4.2.1.3, pg. 4-30: The third paragraph should be expanded to include a description of field screening for organics and analysis for total uranium prior to drilling through the first saturated zone (for clusters and wells in areas of expected contamination).

(26) Section 4.2.1.3, pg. 4-30: Include ammonia and total organic nitrogen in groundwater sample analyses.

(27) Section 4.2.1.3, pg. 4-33: Update discussion regarding installation of shallow and then deeper wells. See above comment for 4.2.1.3, pg. 4-30.

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(28) Section 4.2.1.3, pg. 4-33: The second paragraph states that no well sampling will occur until all wells are installed. Some water sampling will occur in shallow wells prior to the installation of deeper wells in the same cluster. Once the entire cluster is installed, the wells can be developed and sampled. It will take several more months to install the remaining on-site wells and the entire well system does not have to be installed prior to initiating sampling. The Work Plan should specify what wells should be sampled as part of the initial sampling effort. Analytical results could be available prior to the completion of all wells and additional well locations may be identified prior to the drilling rigs leaving the site.

(29) Section 4.2.1.3, pg. 4-34: The two justifications for analyzing monitor wells samples for less than the full hazardous substance list (HSL) are not convincing. As previously discussed, the physical condition, locations, and well construction of some of the RCRA wells is questionable and a well replacement program needs to be implemented. Samples from the RCRA wells were not analyzed for all "organics and metals". Base/neutral and acid extractables (BNAs), HSL pesticides, and PCBs were not analyzed for under the RCRA monitoring system and substances in each of these three categories were detected in the waste pit areas. Since waste pit #4 landfill is entering assessment monitoring some of these compounds may be picked up by this program.

(30) Section 4.2.1.3, pg. 4-34: The last paragraph needs to be rewritten per discussion in previous comment. More than 13 wells should be analyzed for HSLs.

(31) Section 4.2.1.3, pg. 4-35: The first paragraph should be updated with the Characterization Investigation Study (CIS) results. The CIS results should be used to guide the selection of analytes for well samples downgradient of waste units, but is not a basis for excluding a comprehensive investigation of a wide variety of analytes in some of the wells.

(32) Section 4.2.1.4, pg. 4-35: Hazardous "chemical" should be replaced with hazardous "substance" in the second bullet.

(33) Section 4.2.1.4, pg. 4-36: The Work Plan states that CIS samples were composited for physical and chemical analysis. Were samples being analyzed for volatiles also composited?

(34) Section 4.2.1.4, pg. 4-36: If the sediments in the clearwell were not sampled and analyzed for HSL parameters, this activity should be included in the RI Work Plan.

(35) Section 4.2.1.5, pg. 4-39: "Hazardous chemical constituent" at the bottom of the page should be changed to "hazardous substances".

(36) Section 4.2.1.5, pg. 4-39: Analysis of sediments from the storm water retention basin and the testing of the effluent line from Manhole 175 to the Great Miami River is to be included in the RI per requirements of the the Federal Facility Compliance Agreement (FFCA) and not wait for testing under OEPA's Director's Findings and Orders.

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(37) Section 4.2.1.5, pg. 4-40: Reference to "Director's Findings and Orders" should be expanded to "OEPA's June 14, 1987, Director's Findings and Orders".

(38) Table 4.3, pg. 4-42: Any seeps identified near the waste pit area must have both the seep water and underlying soil analyzed for HSLs.

(39) Section 4.2.1.5, pg. 4-43: Reference to Figure 4.4 in the first paragraph should be changed to Figure 4.9.

(40) Section 4.2.1.5, pg. 4-44: Explain how samples will be archived.

(41) Figure 4.9, pg. 4-45: Explain the deletion of sampling locations SW-1 and SW-2 from Work Plan Revision 1 (Figure 4.6 in original draft)?

(42) Section 4.2.1.5, pg. 4-46: Water and underlying soil samples taken from identified seeps proposed in Table 4.3 must be analyzed for complete HSL parameters.

(43) Section 4.2.1.6, pg. 4-49: "Contaminant substance release" should be replaced with "hazardous substance release".

(44) Section 4.3.1, pg. 4-58: Clarify and expound on the first sentence.

(45) Section 4.3.4, pg. 4-59: U.S. DOE is not proposing any additional waste unit and surrounding soil characterization work. U.S. EPA reserves the right to require additional characterization work after the review of the final CIS report.

(46) Section 4.3.4, pg. 4-59: Reliance on CDC's epidemiological study for historic quantification of cumulative doses to the off-site population is not justified. The CDC's epidemiological study must be shown to fulfill the requirements of the FFCA.

(47) Section 4.4.1, pg. 4-77: The endangerment assessment must be performed in accordance with U.S. EPA's "Superfund Public Health Evaluation Manual" (EPA/540/1/86/060, October 1986). This document shall be referenced in the Work Plan.

(48) Section 4.4.4.2, pg. 4-79: The use of the term "contaminants of concern" is more appropriate and consistent than "indicator parameters", "indicator chemicals", or "radiological substance".

(49) Section 4.4.4.2, pg. 4-79: The acronyms ICRP and NCRP should be written out the first time they are used in the text.

(50) Section 4.4.4.2, pg. 81: Substitute "contaminant of concern" for "indicator chemical".

5.0 TECHNICAL APPROACH: FS

(51) Section 5.5., pg. 5-4: The use of RCRA's Groundwater Protection Standards of 40 CFR 264.92 in process of considering the environmental effects in the initial screening of alternatives should be further explained.

(52) Section 5.5.1, pg. 6-21: As presented in U.S. EPA's first comments, 700 days from the date of the Work Plan approval is too long for submission of a draft RI report, especially in light of approval of certain RI activities like on-site well installation.

(53) A date of submission of a detailed FS Work Plan should be presented.

6.0 MANAGEMENT PLAN

(54) Section 6.3.1.4, pg. 6-4: Is Rick Collier the RI/FS Project Manager for U.S. DOE? Explain changes/proposed changes in management structure. Explain where personnel who will be in charge of the day-to-day workings of the RI/FS will be located.

B. Work Plan Supporting Documents

Volume 1: Sampling Plan

1.0 Radiation Measurement Plan

See comments under Work Plan 4.2.1.2

2.0 Surface Soils Sampling Plan

(55) Section 2.3, pg. 1.2-4: During the July 22, 1987, comment resolution meeting it was agreed that ten of the soil samples would be analyzed for all HSL parameters. This agreement does not mean that chemical analysis should not be performed on other samples. Primary substances of concern should be analyzed for in the production area, sewage treatment area, and perimeter of the waste storage area.

(56) Additional off-site sampling for radionuclides is required. See Work Plan 4.2.1.2 for detailed comments.

(57) Use of a FIDLER with a pCi/g detection capability, could result in a 35 pCi/g cleanup level of certain areas.

3.0 Groundwater Sampling Plan

(58) Section 3.3.1, pg. 10: The third sentence is not complete.

(59) Table 3.2, pg. 25: Holding time for HSL base/extractable is not consistent with footnote.

(60) Section 3.3 : None of the water that is purged from wells is to be disposed on the ground, including water from wells outside the waste pit and production area. All purge water should be drummed, analyzed, and disposed of in a manner appropriate for the level of contamination.

(61) Section 3.10, pg. 26: The proposed number of wells to be sampled and analyzed for complete HSL parameters (16 out of 143 wells) is not sufficient. The proposal is inadequate to fully characterize the vertical and horizontal extent of groundwater contamination. As previously presented in the Work

Plan comments, the RCRA monitoring program has left data gaps in both the number/location of wells and the analytes investigated (no BNAs, PCBs, and limited pesticides. All HSL parameters should be analyzed for in wells in the vicinity of the waste pits. These following additional 100-series waste pit area wells are 104, 110, 119, 121, 125, 172, 173, 174, 175, 176, 178, and 183. Well 116, located south of fly ash pile no. 1, should be analyzed for HSL parameters

(62) In addition to the 200-series wells proposed for complete HSL parameters, the following wells should also be analyzed for complete HSLs: 214, 215, 216, 219, 220, 221, and 222. These wells will extend coverage in the waste pit area. HSL analysis on well 214, 215, and 220 will confirm the presence of VOCs that were detected in these wells during RCRA sampling. Additional wells in which acetone, 2-propanol, and butanol were detected during RCRA monitoring should also be considered for full HSL analysis, unless the presence of these analytes are the result of improper sampling procedures.

4.0 Subsurface Soils Sampling Plan

(63) Soil gas analysis should be considered for use in detecting releases from underground storage tanks and the general investigation for volatiles.

5.0 Surface Water and Sediment Sampling Plan

(64) Section 5.1, pg. 1.5.1: The last bullet item under the objectives of the surface and sediment sampling program should have the word "significant" removed.

(65) Table 5.1 (cont.), pg. 30.e: All seeps identified in the waste pit area should have seep water and underlying soils sampled for full HSL parameters.

(66) Table 5.1: The revised table should present all hazardous substances for which the samples will be analyzed.

(67) Section 5.1. pg. 1.5-5: The original Work Plan states that "until analytical results from the waste pit sampling program are available, TOC and TOX have been chosen as indicator parameters in waters from selected drainages, Paddy's Run and the Great Miami River". The results of the CIS are now available and should be used to select HSL parameters that will be analyzed for in the above surface waters. The specific compounds should be outlined in the Work Plan.

(68) Section 5.2.4, pg. 1.5-8: The need for toxicity testing of the wastewater effluent for acute and chronic effects on aquatic organisms is required. Toxicity testing would provide very useful information regarding the potential for adverse environmental impacts from multiple pollutants. The NPDES regulation of this discharge does not preclude the investigation of its impacts under the RI.

(69) There is no explanation on how samples will be archived, especially in light of short holding times imposed for certain analytes.

6.0 Biological Resources Sampling Plan

(70) Section 6.3.5, pg. 1.6-7: State what specific CLP parameters are to be analyzed for biological resource sampling. Justification should be presented for the selected parameters (i.e., those that tend to bio-accumulate).

(71) Section 6.3.6, pg. 1.6-7: Proposed language does not address comment on Revision 0. The sampling of aquatic organisms and the analysis of the data should not solely address tissue contaminant levels, but should also address community structure. Analysis of the benthic community, if properly conducted and interpreted, should prove useful in evaluating the effects and extent of releases from the site.

7.0 Facilities Testing Plan

(72) Section 4.2.1.7, pg. 4-54: Testing, as required by the interim underground storage tank regulations, should be included in the facilities testing plan.

Volume 2: Environmental Health and Safety Plan

Volume 3: Community Information Plan

Comments on Work Plan Revision 0 - Community Relations Plan were not addressed in Revision 1.

(73) The plan should be called "Community Relations Plan", not "Community Information Plan".

(74) The plan does not include a description of the community, nor past community involvement with the facility. A history of the community's health and environmental concerns are not addressed. A summary identifying the current concerns of the citizens, with direct community relations efforts directed to the needs of the community.

(75) Information in the Task 1 report, Section 2.0 should be included in the Community Relations Plan.

(76) A list of names, addresses, and telephone numbers of key State and local officials, local Congressional staff offices, State elected officials, State environmental or pollution control agencies, public interest groups, and the media is not included. In addition, a mailing list consisting of interested citizens should be established to keep them informed of any major findings and significant activities at the facility. Names and addresses of private citizens should not be included in the copy of the Community Relations Plan that is made available to the public.

(77) The plan does not locate where the facility is in proximity to the community (i.e., homes, schools, playgrounds, businesses, lakes, streams, etc.). The location of public water supplies and private wells should also be included.

(78) Section III.4-1: Refers to the FMPC reading room. The exact location of this room and its accessibility to the public should be addressed in the plan.

(79) Table 1.1: Project Management states that Ms. S.R. Cook is a community liaison. Section III.4-1 refers to Ms. S.R. Cook as a study liaison. Her position should be clarified and the text corrected.

(80) Table 2.1, Task 1.2: Mentions that fact sheets will provide information of site investigations, but does not specify the type of information that will be offered.

(81) A tentative schedule for the technical tasks outlined in Phase I and II of the study needs to be in the plan.

(82) The day-to-day operations and emergency situations, such as spills or equipment failures, needs to be outlined in the document. It is necessary to address how the community will be notified of occurrences.

Volume 4: Data Management Plan

Volume 5: Quality Assurance Plan

(83) Page 2 should be corrected to remove implication that U.S. DOE will recommend remedial action alternatives in the FS. Alternatives are evaluated by U.S. DOE; recommendations for remedy selection are not included in FS.

(84) A different laboratory will be analyzing the radiological samples. A copy of the Radioanalytical Methodology and Procedures, Quality Assurance Manual, QA Manual should be submitted for review.

(85) Additional comments on the Quality Assurance Plan may be provided after review of the above comments.

(86) Table 4-4: Update table with revised sample numbers as a result of Work Plan revision.

(87) Section 5.2, pg. 27: No drilling muds are to be used. Water used to aid in drilling has to be analyzed and results reviewed, prior to its introduction into the borehole.

(88) GENERAL COMMENT: Fold-out sized versions of figures should be provided in final Work Plan. The scale of the drawings, with the required level of detail makes them very difficult to use.